REMARKS

Claim 26 has been amended to recite "determining the natural killer lymphocyte toxicity of said patient to provide a baseline natural killer lymphocyte cytotoxicity" and that the "immunostimulatory dosage increases natural killer lymphocyte toxicity in the patient at least 50% above the baseline." Support for these amendments can be found throughout the specification, including at page 20, line 24, through page 21, line 3.

New claim 27 relates to a method for stimulating the immune system of a human patient that includes determining a baseline natural killer lymphocyte cytotoxicity, administering an immunostimulatory dosage of an α-interferon composition to a patient that increases the natural killer lymphocyte cytotoxicity of the patient at least 50% above the baseline, and surgically resecting the malignant tumor. New dependent claims 28-40 recite further characteristics of the immunostimulatory dosages, resectable tumors, or methods for measuring natural killer lymphocyte cytotoxicity. Support for new claims 27-40 can be found throughout the specification, including at page 20, line 24, through page 21, line 3, and original claims 2-3, 7-12, 18-19, and 21-22.

Applicant respectfully requests reconsideration and allowance of claims 4-6, 8-12, 18, 21-22, and 26-40.

Rejections under 35 U.S.C. § 102

The Examiner rejected claims 4-6, 8, 18, 21, 22 and 26 under 35 U.S.C. § 102(e) as being anticipated by Tovey et al. (U.S. Patent 5,997,858). The Examiner asserted that "Tovey teaches methods of administering, oromucosally, alpha-interferon in comparable dosage ranges, 5000 U to about 20 x 10^6, with a preferable range of 1 x 10^4 U to about 1 x 10^6 U." The Examiner also asserted that "Tovey teaches that the mechanism for the beneficial effects of alpha-interferon may be due to stimulation of lymphoid tissue surrounding the nasopharyngeal and oral cavities. Thus, it appears that Tovey teaches immunostimulatory dosages."

The Tovey et al. patent does not disclose the methods of amended claims 4-6, 8, 18, 21, 22, and 26, which relate to stimulating the immune system of a human patient having a non-resectable malignant tumor. The methods of claims 4-6, 8, 18, 21, 22, and 26 include determining a baseline natural killer lymphocyte cytotoxicity, administering an

immunostimulatory dosage of α-interferon to the patient that increases the natural killer lymphocyte cytotoxicity of the patient at least 50% over the baseline, and treating the patient with effective non-surgical methodologies to diminish the tumor.

In contrast, the Tovey et al. patent discloses oromucosal administration of α-interferon to a mammal with a neoplastic disease. An amount of α-interferon ranging from 5000 IU to $20x10^6$ IU is administered to the mammal, as long as the amount of α-interferon does not induce a pathological response when administered parenterally. Since the Tovey et al. patent does not disclose determining a baseline natural killer lymphocyte toxicity of a patient then administering an immunostimulatory dosage of α-interferon that increases the patient's baseline natural killer lymphocyte toxicity at least 50%, the Tovey et al. patent does not anticipate the claimed methods. The Examiner is requested to withdraw the rejection of claims 4-6, 8, 18, 21, 22, and 26 under §102(e).

The Examiner rejected claims 9-12 under 35 U.S.C. § 102(e) as being anticipated by Tovey et al. in light of Brittenden et al. (Brittenden et al., Cancer, 1996, 77(7):1226-1243). The Examiner asserted that because "Tovey teaches methods using dosages that are within the range of those recited in the instant claims, Tovey inherently teaches the methods of claims 9-12." The Examiner also asserted that "the ability of alpha-interferon to increase NK-lymphocyte activity is an inherent effect of the administration of alpha-interferon, as evidenced by the teachings of Brittenden." Brittenden was characterized as teaching "alpha-interferon enhances NK cell activity and has been successfully used in the treatment of renal carcinoma as part of a therapeutic regimen comprising the administration of interleukin-2."

The Tovey et al. patent does not inherently disclose the methods of claims 9-12. As indicated above, the Tovey et al. patent does not disclose determining a patient's baseline natural killer lymphocyte cytotoxicity activity and administering an immunostimulatory dosage of α-interferon that increases the patient's natural killer lymphocyte cytotoxicity 50% over the baseline.

The Brittenden reference is a review of the role of natural killer cells cytotoxicity and lymphokine-activated killer activity in patients with cancer. The Brittenden reference does not disclose determining the patient's baseline natural killer lymphocyte cytotoxicity and administering an amount of α-interferon that increases the patient's natural killer lymphocyte

cytotoxicity at least 50% over baseline. Thus, the Tovey et al. patent does not anticipate claims 9-12, and the Examiner is requested to withdraw the rejection under 35 U.S.C. §102(e).

CONCLUSION

Attached is a marked-up version of the changes being made by the current amendment.

Applicant asks that claims 4-6, 8-12, 18, 21-22, and 26-40 be allowed. Enclosed is a check for the Petition for Extension of Time fee. Please apply any other charges or credits to Deposit Account No. 06-1050.

Respectfully submitted,

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Version with markings to show changes made

In the claims:

Claim 26 has been amended as follows:

26. (Three times amended) A method for stimulating the immune system of a human patient having a non-resectable malignant tumor, said method comprising

a) determining the natural killer lymphocyte cytotoxicity of said patient to provide a baseline natural killer lymphocyte cytotoxicity;

b) administering an immunostimulatory dosage of an α-interferon composition to said patient, wherein said immunostimulatory dosage increases the natural killer lymphocyte cytotoxicity of said patient at least 50% above said baseline; and

c) treating said patient with effective non-surgical medical methodologies to diminish said tumor[, wherein said immunostimulatory dosage is about 500 U/m^2 to about 1,000,000 U/m^2 per day].